

RCRA VISUAL SITE INSPECTION SUMMARY
Region VI, Technical Compliance Section

FACILITY'S NAME(S): Sun Refinery and Marketing Co.

EPA ID NUMBER: OKD058078775

ADDRESS: 1700 Union Ave. Tulsa, OK

LOCATION: 1700 Union Ave. Tulsa, OK

FACILITY CONTACT: George Meyers

PHONE: _____

SITE DESCRIPTION: Petroleum Refinery

PREPARED BY: Harding Lawson Assoc. DATE PREPARED: July 21, 1986

REVIEWED BY: William Gallagher

DATE PREPARED: _____

ANTICIPATED DRAFT PERMIT: 3/88

ANY ON-GOING STATE/FED 264, 265, 270 CORRECTIVE ACTION OR CERCLA:

State Action: Recovery wells to recover hydrocarbon are in use.

DATE OF INSPECTION: June 30, 1986

DOES FACILITY HAVE CERCLA SITES YES X NO _____

TYPE OF DRINKING WATER SUPPLY IN 3-MILE RADIUS: Municipal and Industrial

TARGET POPULATION WITHIN 3-MILE RADIUS: Tulso - approx. 500 within 1 mile

RECOMMENDATIONS: _____ SV X RI _____ IN _____ No Further Action under RFA

_____ 3004(u) _____ 3007

Possible Enforcement Action: _____ 3008(a) X 3008(h)

I. Visual Site Inspection

A. Purpose

- * Verify PR Information
- * Identify additional releases
- * Assess Condition of SWMUs
- * Aid in identifying Facility Releases
- * Assess need for Sampling
- * Determine Sampling Locations

B. NUMBER OF SOLID WASTE MANAGEMENT UNITS (SWMUs) INVESTIGATED DURING THE VSI:

<u>LIST OF SWMU</u>	<u>REGULATED BY RCRA*</u>	<u>STATUS**</u>	<u>SUBJECT TO GWM***</u> <u>SUBPART F</u>
1) Midco Landfill	N	I	N
2) West Landfarm	N	I	N
3) TEL Weathering Area	N	I	N
4) Asphalt Sludge Landfill	N	I	N
5) North Petroleum Sludge Landfill	N	I	N
6) Northeast Landfill	N	I	N
7) East Landfill	N	I	N
8) Scrap Metal Landfill	N	I	N
9) Concrete Sump	N	A	N
10) Wastewater Treatment System	?	A	N
11) No. 2 Spray Pond	N	A	N
12) Cat-Cracker Landfill	N	I	N
13) Scrap Metal Landfill	N	I	N
14) Allison Property Landfill	N	A	N
15) Storm Impoundment Basin	N	A	N
16) 120-Acre Land Treatment Areas (RCRA-regulated)	Y	A	Y
17) Oily Sludge Roads	N	I	N
18) Tank Diked Areas	N	I	N

C. NUMBER OF SWMUs IDENTIFIED DURING THE VSI (NOT IDENTIFIED IN THE PR): NoneD. NUMBER SWMUs TO BE INCLUDED IN THE RI: 12 (except RCRA units subject to Subpart F)LIST OF SWMU

- 1) No. 1, 4
- 2) No. 6-12
- 3) No. 14, 15, 17

* Y-Yes

** Active or Inactive (A or I)

E. NUMBER OF SOLID WASTE MANAGEMENT (SWMUs) REQUIRING NO FURTHER ACTION:

LIST OF SWMU

- 1) No. 2, 3, 5
- 2) No. 13
- 3) No. 18

F. NUMBER OF SWMU REQUIRING SAMPLING VISIT: 0

- G. Supplemental Information on RCRA regulated units
(describe any problems identified or suspected from regulated units.)

LIST OF SWMU

- 1) SWMU (16) - Further study of air releases needed for these units.

H. PHOTOGRAPHS:

 Aerial X Ground

I. SITE MAP: Attach to Report

RECOMMENDATIONS:

The contractor recommends a RI for the entire facility. EPA agrees, there is obviously a release of hydrocarbons to the groundwater. Upwards of 1 million barrels of hydrocarbons may exist on the water table. Several SWMUs are probably releasing hazardous constituents to the groundwater as well.

The contractor recommended No Further Action at the asphalt sludge landfill. An EPA Fit Sampling Inspection on 12/17/85 revealed that this unit was seeping an oily material from the base of the landfill. Therefore, EPA recommends this unit be included in the RI for the facility.

As the Permit is not scheduled until 12/87, a 3008(h) order may be appropriate.

CONCUR: Greg Uetrecht

DATE: 9/30/86

CONTRACTOR
RECOMMENDATION FOR REMEDIAL INVESTIGATION

Sun has confirmed that hydrocarbons have appeared on the ground-water surface at various locations beneath the refinery property (1, page III-96). Since 1981, Sun has had an active program to assess the locations of hydrocarbon pools and to recover floating hydrocarbons (1, page III-96). Data gathered as part of the June 30 and July 1, 1986 VSI indicate that the ground water over a significant portion of the site, as shown on Figure 2, is covered by a layer of hydrocarbons up to 6 feet thick in places (22). Also, the data (22) indicate that approximately 1,000,000 barrels of hydrocarbon may exist on the surface of the ground water. Some 2500 barrels of hydrocarbons have been recovered and recycled since 1985, and an undefined volume of water associated with the recovery operation has and continues to be reinjected into the ground water.

The magnitude of the hydrocarbon problem discussed above indicates that the facility as a whole poses a danger to ground-water quality and that it is difficult to distinguish between the various units and releases. Adequate evidence of a release from the facility exists, and it is more efficient to study the facility as a whole rather than individual SWMUs. Therefore, a remedial investigation (RI) should be conducted for the entire facility in order to evaluate the impacts associated with releases of hydrocarbons to ground water as well as to identify appropriate corrective actions.

The remedial investigation should incorporate, where feasible, the efforts associated with Sun's ongoing oil recovery program as well as Sun's

RCRA monitoring program. In addition, the remedial investigation effort should include a review of the report and data collected by EPA as part of their October 1985 RCRA/CERCLA site inspection (28).

A summary of the SHMUs that should be further evaluated as part of the RI relative to releases to the environment, as well as those where no further action is warranted, is provided below.

RECOMMENDED INVESTIGATION ACTIVITIES

<u>SHMU</u>	<u>Summary of Recommendations</u>
1. Midco Landfill	NFIA ¹ - Evaluate as part of RI
2. West Landfarm	NFIA - Evaluate as part of RI
3. TEL Weathering Area	NFA ² - Wastes removed
4. Asphalt Sludge Landfill	NFA - Wastes removed*
5. North Petroleum Sludge Landfill	NFA - Wastes removed
6. Northeast Landfill	NFIA - Evaluate as part of RI
7. East Landfill	NFIA - Evaluate release to ground water as part of RI
8. Scrap Metal Landfill	NFIA - Evaluate as part of RI

¹ NFIA - No further immediate action.

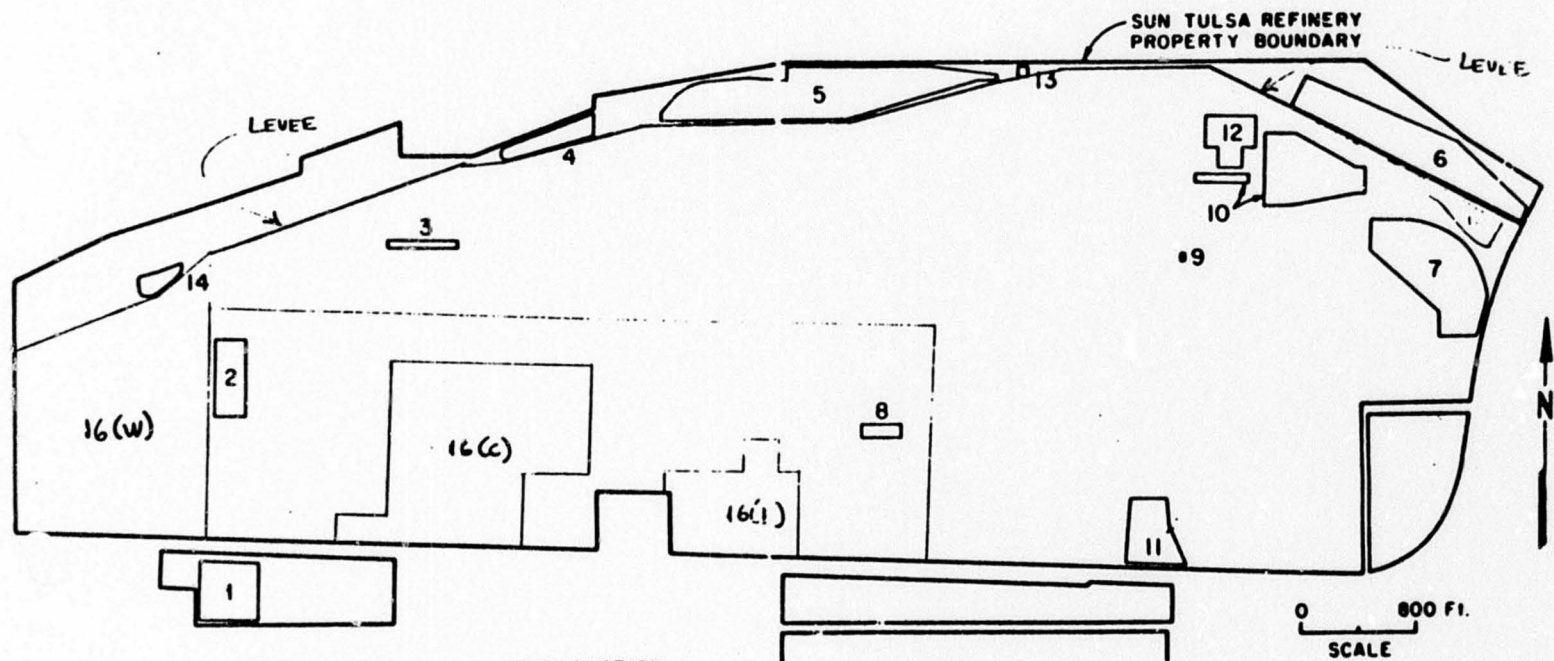
² NFA - No further action.

* EPA recommends that this unit be included in the facility wide RI, because a EPA FI Inspection noted seepage from this landfill.

RECOMMENDED INVESTIGATION ACTIVITIES (continued)

SMHU	Summary of Recommendations
9. Concrete Sump	NFIA - Evaluate as part of RI
10. Wastewater Treatment System	NFIA - Evaluate releases to air and ground water as part of RI
11. No. 2 Spray Pond	NFIA - Evaluate release to ground water as part of RI
12. Cat-Cracker Landfill	NFIA - Evaluate release to ground water as part of RI
13. Scrap Metal Landfill	NFA
14. Allison Property Landfill	NFIA - Evaluate as part of RI
15. Storm Impoundment Basin	NFA - Followup with OSDH for cleanup
16. 120-Acre Acre Land Treatment	*NFA - Modify permit to include vapor monitoring
17. Gily Sludge Roads	NFIA - Evaluate as part of RI
18. Tank Diked Areas	NFA

* EPA recommends further study to verify air releases



EXPLANATION

- | | | |
|------------------------------------|--|-----------------------|
| 1. MIDCO LANDFILL | 8. SCRAP METAL LANDFILL | |
| 2. WEST LANDFARM | 9. CONCRETE SUMP | |
| 3. TEL WEATHERING AREA | 10. WASTEWATER TREATMENT SYSTEM (includes sludge treatment unit) | |
| 4. ASPHALT SLUDGE LANDFILL | 11. #2 Spray Pond | |
| 5. NORTH PETROLEUM SLUDGE LANDFARM | 12. CAT-CRACKER LANDFILL | 17. Waste Pile (?) |
| 6. NORTHEAST LANDFILL | 13. SCRAP METAL LANDFILL | 18. Oily Sludge Roads |
| 7. EAST LANDFILL | 14. ALLISON PROPERTY LANDFILL | 19. Tank Diked Areas |
| | 15. Storm Impoundment Basin | |
| | 16. (E,C&W). 120 Acre Land Application Area | |

FIGURE 1 SOLID WASTE MANAGEMENT UNITS SUN TULSA REFINERY

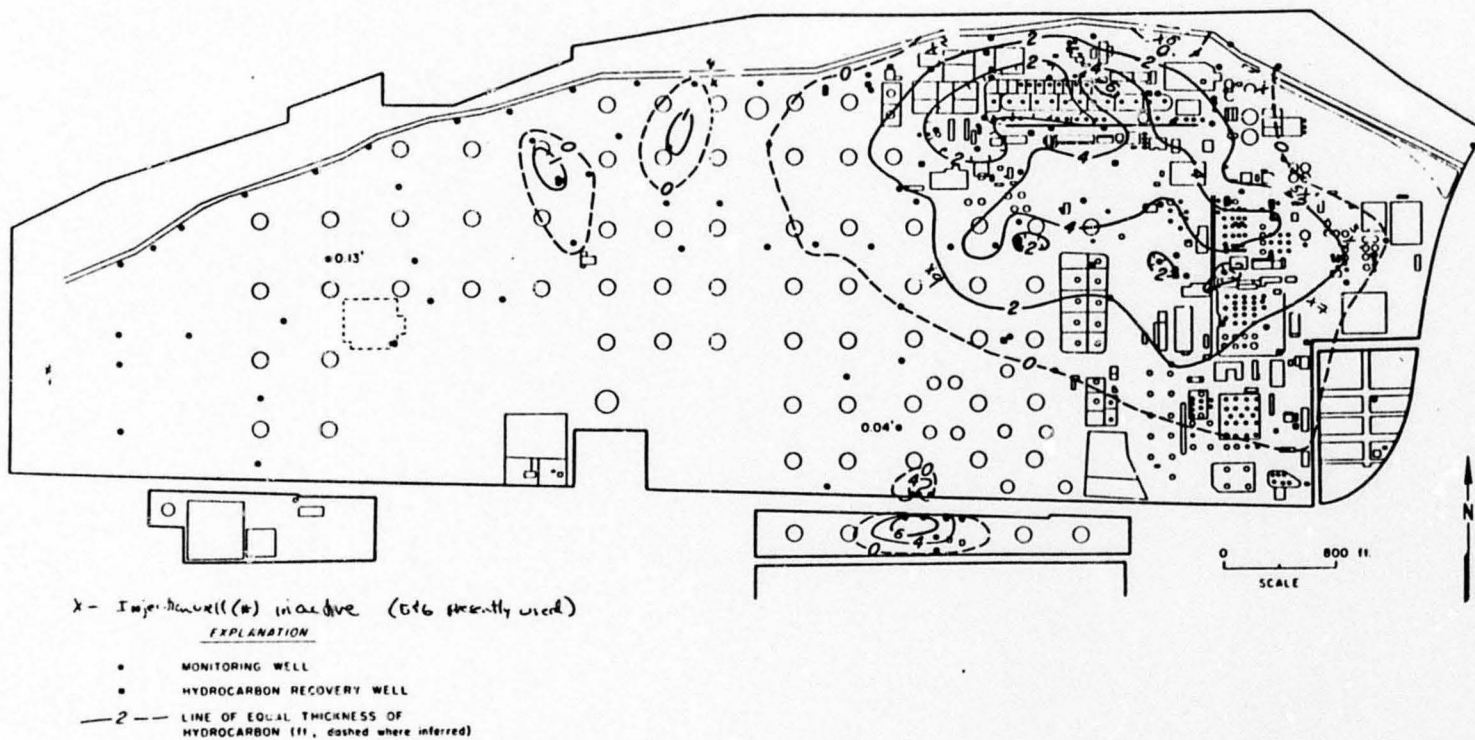


FIGURE 2. GENERALIZED HYDROCARBON THICKNESS MAP, SUN TULSA REFINERY (Mar. 1986)